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COHEN, STEFANIE J	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/597,454	OISHI, KEIICHIRO	
	Examiner	Art Unit	
	STEFANIE COHEN	4162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _20 February 2007_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-139_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-139_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _1/30/2007; 10/30/2006; 7/26/2006_.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 21- 22, 82-117 are objected to because of the following informalities: Claims 21, 22, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 104-117 states the word “temporally”. This should be temporary. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-139 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-6 and 28-33 recites the limitation "μ and β". There is insufficient antecedent basis for this limitation in the claim.

Claims 1-5 and 28-30 states an average grain diameter of 200 micrometers or less in a macrostructure when melted and solidified. Clarification is needed on if this specific diameter is obtained before or after the melting and solidifying.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-9, 11-14, 16, 18, 20-25, 28-32, 34-41, 47-63, 69-70, 73-75-76, 78, 82-83, 92-103, 104-108, 112-117,118-122, 123-130 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912). Parikh teaches a copper alloy comprising 1.5-4% silicon, 15-37% zinc, .01-.35% phosphorus, .01-3.5% zirconium and a balance of copper. Therefore, f0=38.4-78.2, f1=.003-35, f2=.43-400 and f3=4.28-400. It would have been obvious to one of ordinary skill in the art at the time of the invention to one of ordinary skill in the art to optimize the composition to obtain maximum strength and good bend properties in the alloy. Parikh, col. 3 line 44, teaches the alloy has a grain size of less than .015 mm (150 µm). Although Parikh teaches an alloy composition and an alloy grain size, Parikh does not teach a metal structure containing an alpha phase and one or more addition phases. Oisha, paragraph 100 of the PGPUB, teaches an alpha and gamma phase copper/zinc alloy. Oisha teaches an alloy where the gamma phase ranges from 5-70% and the alpha phase is 30% or more. Therefore, f4≥35 and f5=5-70. It would have been obvious

to one of ordinary skill in the art at the time of the invention be to incorporate the Oisha properties into the Parikh alloy because Oisha teaches these properties improve the machinability of the alloy.

Regarding claim 2, Oisha, paragraph 18, teaches a copper alloy as discussed in claim 1 and further comprising .02-.4% lead. Therefore, f0=40-78, f1=.003-35, f2=.43-400, f3=4-400, f6≥40-79 and f7≤38.5-78.

Regarding claim 3, Parikh teaches a copper alloy as discussed in claim 1 and further comprising .01-8% tin. Therefore, f0=28-78, f1=.003-35, f2=.43-400, f3=4-400.

Regarding claim 4, Parikh teaches a copper alloy as discussed in claim 2 and further comprising .02-.4% tin. Therefore, f0=28-78, f1=.003-35, f2=.43-400, f3=4-400, f6≥40-79 and f7≤38.5-78.

Regarding claim 5, Parikh teaches a copper alloy as discussed in claim 1 and further adding .01-4% aluminum. Therefore, f0=29-78, f1=.003-35, f2=.43-400, f3=4-400.

Regarding claim 6, Oisha teaches an alloy where the gamma phase ranges from 5-70% and the alpha phase is 30% or more. Therefore, f8≥5.5-70.5 and f9≤4.5-69.5.

Regarding claims 7 and 34-37, Parikh col. 3 line 22, teaches a copper alloy comprising .01-20% nickel.

Regarding claims 8 and 38-39, Oisha, paragraph 97 of the PGPUB, teaches all of the copper alloys have a metal construction that is a composite phase that is an alpha phase matrix.

Regarding claims 9 and 40-41, Parikh teaches an annealing step at a high temperature followed by a cold reduction step. It would have been obvious to one of ordinary skill in the art at the time of the invention that at a specific temperature or temperature range a peritectic reaction will take place and therefore is an inherit feature of the alloy.

Regarding claims 11 and 43-47, Oisha teaches an alloy with an alpha and a gamma phase. It would have been obvious to one of ordinary skill in the art at the time of the invention to uniformly distribute the gamma phase in the matrix to optimize the machinability throughout the entire alloy.

Regarding claims 12 and 48, Parikh teaches a copper alloy as discussed in claim 1 and further adding .02-.4% lead. It would have been obvious to one of ordinary skill in the art at the time of the invention uniformly distribute the gamma phase in the matrix to optimize the machinability throughout the entire alloy.

Regarding claims 13, 49, 51 and 53-60, Parikh, col. 3 lines 36-40, teaches the alloy may be cast in any desire manner and hot rolled to break up the cast structure and obtain the desired gage.

Regarding claims 14, 50, 52 and 61-63, Oisha, Fig. 1, teaches cuttings formed in cutting a round bar of copper alloy by a lathe. Oisha, paragraph 54 of the PGPUB, teaches an alloy cut by a lathe with a point noise straight tool at a rake angle of -8 degrees and at a cutting rate of 50 m/min, a cutting depth of 1.5 mm and a feed of .11 mm/rev. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a lathe taught by Oishi to cut the Parikh alloy because this is one specific conventional and efficient method to cut an alloy. It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the properties of the lathe taught by Parikh to obtain a necessary alloy shape.

Regarding claims 16 and 69-70, Parikh, col. 3 lines 36-40, teaches the alloy may be cast in any desire manner and hot rolled to break up the cast structure and obtain the desired gage.

Regarding claims 18, 73 and 76, it would have been obvious to one of ordinary skill in the art at the time of the invention optimize the temperature of the casting process to obtain a specific solid phase fraction.

Regarding claims 20, 75 and 78, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the casting process to obtain a specific shape.

Regarding claims 21- 22, 82-83, 92-103 and 112-117, Oishi, paragraph 10 of the PGPUB, teaches the alloy is suitable for use in city water faucets, water/supply/drainage metal fittings and hot water supply pipe fittings.

Regarding claims 23-24,104-108 and 118-122, Oishi, paragraph 11 of the PGPUB, teaches the copper alloy is suitable for hydraulic parts, bearings and gears.

Regarding claims 25 and 123-130, Oishi, paragraph 13 of the PGPUB, teaches the copper alloy can be formed into tube connectors called “nipples”.

Regarding claim 28, Parikh teaches a copper alloy as discussed in claim 2 and further comprising .01-4% aluminum. Therefore, f0=29-78, f1=.003-35, f2=.43-400, f3=4-400, f4≥30 and f5=5-70.

Regarding claim 29, Parikh teaches a copper alloy as discussed in claim 3 and further comprising .01-4% aluminum. Therefore, f0=22-78, f1=.003-35, f2=.43-400, f3=4-400, f4≥30 and f5=5-70.

Regarding claim 30, Parikh teaches a copper alloy as discussed in claim 4 and further comprising .01-4% aluminum. Therefore, f0=23-78, f1=.003-35, f2=.43-400, f3=4-400, f4≥30 and f5=5-70.

Regarding claims 31-32, Oisha teaches an alloy where the gamma phase ranges from 5-70% and the alpha phase is 30% or more. Therefore,f8≥5.5-70.5 and f9≤4.5-69.5.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 1 and further in view of Verhoeven et al (4770718). Although Parikh and Oisha teach a copper alloy composition, both do not teach an alloy with a dendrite network. Verhoeven, Fig 1, teaches a method of preparing a copper-dendritic composite alloy. These steps include melting the alloy and forming droplets and then solidifying droplets as spheres. The two dimensional grain shape would therefore be a circular shape. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the Verhoeven method into the Parikh modified by Oisha alloy because Verhoeven, col. 2 line 27, teaches dendrites increase the tensile strength of the alloy.

Claims 19 and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 18 and

further in view of Verhoeven et al (4770718). Although Parikh and Oisha teach a copper alloy composition, both do not teach a specific grain diameter or a solid phase fraction. Verhoeven, col. 3 lines 27-29, teaches it is preferred to form droplets having average sizes in the range from about 50 micrometers to 2000 micrometers. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the Verhoeven particle size into the Parikh modified by Oisha alloy because Verhoeven teaches this is the preferred particle size to obtain high tensile strength alloys. It also would have been obvious to one of ordinary skill in the art at the time of the invention optimize the temperature of the casting process to obtain a specific solid phase fraction.

Regarding claim 79, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the casting process to obtain a specific shape.

Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 3 and further in view of Verhoeven et al (4770718). Although Parikh and Oisha teach a copper alloy composition, both do not teach an alloy with a dendrite network. Verhoeven, Fig 1, teaches a method of preparing a copper-dendritic composite alloy. These steps include melting the alloy and forming droplets and then solidifying droplets as spheres. The two dimensional grain shape would therefore be a circular shape. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the

Verhoeven method into the Parikh modified by Oisha alloy because Verhoeven, col. 2 line 27, teaches dendrites increase the tensile strength of the alloy.

Claims 74 and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 73 and further in view of Verhoeven et al (4770718). Although Parikh and Oisha teach a copper alloy composition, neither teaches a particle size or a solid phase fraction. Verhoeven, col. 3 lines 27-29, teaches it is preferred to form droplets having average sizes in the range from about 50 micrometers to 2000 micrometers. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the Verhoeven particle size into the Parikh modified by Oisha alloy to optimize the alloy tensile strength. It also would have been obvious to one of ordinary skill in the art at the time of the invention optimize the temperature of the casting process to obtain a specific solid phase fraction.

Regarding claim 80, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the casting process to obtain a specific shape.

Claims 77 and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 76 and further in view of Verhoeven et al (4770718). Although Parikh and Oisha teach a copper

alloy composition, both do not teach an alloy with a dendrite network. Verhoeven, Fig 1, teaches a method of preparing a copper-dendritic composite alloy. These steps include melting the alloy and forming droplets and then solidifying droplets as spheres. The two dimensional grain shape would therefore be a circular shape. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the Verhoeven method into the Parikh modified by Oisha alloy because Verhoeven, col. 2 line 27, teaches dendrites increase the tensile strength of the alloy.

Regarding claim 81, it would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the casting process to obtain a specific shape.

Claim 131 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 79 and further in view of Verhoeven et al (4770718). Although Parikh and Oisha teach a copper alloy composition, both do not teach an alloy with a dendrite network. Verhoeven, Fig 1, teaches a method of preparing a copper-dendritic composite alloy. These steps include melting the alloy and forming droplets and then solidifying droplets as spheres. The two dimensional grain shape would therefore be a circular shape. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the Verhoeven method into the Parikh modified by Oisha alloy because Verhoeven, col. 2 line 27, teaches dendrites increase the tensile strength of the alloy. Oishi, paragraph 13

of the PGPUB, further teaches the copper alloy can be formed into tube connectors called "nipples".

Claim 132 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 80 and further in view of Verhoeven et al (4770718). Although Parikh and Oisha teach a copper alloy composition, both do not teach an alloy with a dendrite network. Verhoeven, Fig 1, teaches a method of preparing a copper-dendritic composite alloy. These steps include melting the alloy and forming droplets and then solidifying droplets as spheres. The two dimensional grain shape would therefore be a circular shape. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the Verhoeven method into the Parikh modified by Oisha alloy because Verhoeven, col. 2 line 27, teaches dendrites increase the tensile strength of the alloy. Oishi, paragraph 13 of the PGPUB, further teaches the copper alloy can be formed into tube connectors called "nipples".

Claim 133 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 81 and further in view of Verhoeven et al (4770718). Although Parikh and Oisha teach a copper alloy composition, both do not teach an alloy with a dendrite network. Verhoeven, Fig 1, teaches a method of preparing a copper-dendritic composite alloy. These steps include melting the alloy and forming droplets and then solidifying droplets as spheres. The two

dimensional grain shape would therefore be a circular shape. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the Verhoeven method into the Parikh modified by Oisha alloy because Verhoeven, col. 2 line 27, teaches dendrites increase the tensile strength of the alloy. Oishi, paragraph 13 of the PGPUB, further teaches the copper alloy can be formed into tube connectors called “nipples”.

Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 13 and further in view of Ohno (4515204). Although Parikh and Oisha teach a copper alloy composition, neither teaches a continuous metal composition. Ohno teaches a continuous metal casting process. Ohno, col. 2 lines 10-13, teaches continuous casting, in an upward or horizontal direction of an alloy having a cross sectional shape in the form of a plate, bar or tube. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the Ohno casting method to form the Parikh alloy because Parikh, col. 1 lines 59-62, teaches the continuous casting of a metal ingot results in a smooth and beautiful surface with a high degree of stability. It would have been obvious to one of ordinary skill in the art at the time of the invention that the alloy would be stretched as it is pull in the upward or horizontal direction.

Claims 64 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 49 and

further in view of Ohno (4515204). Although Parikh and Oisha teach a copper alloy composition, neither teaches a continuous metal composition. Ohno teaches a continuous metal casting process. Ohno, col. 2 lines 10-13, teaches continuous casting, in an upward or horizontal direction of an alloy having a cross sectional shape in the form of a plate, bar or tube. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the Ohno casting method to form the Parikh alloy because Parikh, col. 1 lines 59-62, teaches the continuous casting of a metal ingot results in a smooth and beautiful surface with a high degree of stability. It would have been obvious to one of ordinary skill in the art at the time of the invention that the alloy would be stretched as it is pull in the upward or horizontal direction.

Claims 65 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 51 and further in view of Ohno (4515204). Although Parikh and Oisha teach a copper alloy composition, neither teaches a continuous metal composition. Ohno teaches a continuous metal casting process. Ohno, col. 2 lines 10-13, teaches continuous casting, in an upward or horizontal direction of an alloy having a cross sectional shape in the form of a plate, bar or tube. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the Ohno casting method to form the Parikh alloy because Parikh, col. 1 lines 59-62, teaches the continuous casting of a metal ingot results in a smooth and beautiful surface with a high degree of stability. It would have

been obvious to one of ordinary skill in the art at the time of the invention that the alloy would be stretched as it is pull in the upward or horizontal direction.

Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 53 and further in view of Ohno (4515204). Although Parikh and Oisha teach a copper alloy composition, neither teaches a continuous metal composition. Ohno teaches a continuous metal casting process. Ohno, col. 2 lines 10-13, teaches continuous casting, in an upward or horizontal direction of an alloy having a cross sectional shape in the form of a plate, bar or tube. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the Ohno casting method to form the Parikh alloy because Parikh, col. 1 lines 59-62, teaches the continuous casting of a metal ingot results in a smooth and beautiful surface with a high degree of stability. It would have been obvious to one of ordinary skill in the art at the time of the invention that the alloy would be stretched as it is pull in the upward or horizontal direction.

Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 54 and further in view of Ohno (4515204). Although Parikh and Oisha teach a copper alloy composition, neither teaches a continuous metal composition. Ohno teaches a continuous metal casting process. Ohno, col. 2 lines 10-13, teaches continuous casting, in an upward or horizontal direction of an alloy having a cross sectional shape in the form of a plate, bar

or tube. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the Ohno casting method to form the Parikh alloy because Parikh, col. 1 lines 59-62, teaches the continuous casting of a metal ingot results in a smooth and beautiful surface with a high degree of stability. It would have been obvious to one of ordinary skill in the art at the time of the invention that the alloy would be stretched as it is pull in the upward or horizontal direction.

Claim 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 58 and further in view of Ohno (4515204). Although Parikh and Oisha teach a copper alloy composition, neither teaches a continuous metal composition. Ohno teaches a continuous metal casting process. Ohno, col. 2 lines 10-13, teaches continuous casting, in an upward or horizontal direction of an alloy having a cross sectional shape in the form of a plate, bar or tube. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the Ohno casting method to form the Parikh alloy because Parikh, col. 1 lines 59-62, teaches the continuous casting of a metal ingot results in a smooth and beautiful surface with a high degree of stability. It would have been obvious to one of ordinary skill in the art at the time of the invention that the alloy would be stretched as it is pull in the upward or horizontal direction.

Claims 86 and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 15 and

further in view of Ohno (4515204). Although Parikh and Oisha teach a copper alloy composition, neither teaches a continuous metal composition. Ohno teaches a continuous metal casting process. Ohno, col. 2 lines 10-13, teaches continuous casting, in an upward or horizontal direction of an alloy having a cross sectional shape in the form of a plate, bar or tube. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the Ohno casting method to form the Parikh alloy because Parikh, col. 1 lines 59-62, teaches the continuous casting of a metal ingot results in a smooth and beautiful surface with a high degree of stability. It would have been obvious to one of ordinary skill in the art at the time of the invention that the alloy would be stretched as it is pull in the upward or horizontal direction. Oishi, paragraph 10 of the PGPUB, further teaches the alloy is suitable for use in city water faucets, water/supply/drainage metal fittings and hot water supply pipe fittings.

Claims 88, 89 and 110 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 64 and further in view of Ohno (4515204). Although Parikh and Oisha teach a copper alloy composition, neither teaches a continuous metal composition. Ohno teaches a continuous metal casting process. Ohno, col. 2 lines 10-13, teaches continuous casting, in an upward or horizontal direction of an alloy having a cross sectional shape in the form of a plate, bar or tube. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the Ohno casting method to form the Parikh alloy because Parikh, col. 1 lines 59-62, teaches the continuous casting of a metal ingot

results in a smooth and beautiful surface with a high degree of stability. It would have been obvious to one of ordinary skill in the art at the time of the invention that the alloy would be stretched as it is pull in the upward or horizontal direction. Oishi, paragraph 10 of the PGPUB, further teaches the alloy is suitable for use in city water faucets, water/supply/drainage metal fittings and hot water supply pipe fittings.

Claims 90, 91 and 111 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 65 and further in view of Ohno (4515204). Although Parikh and Oisha teach a copper alloy composition, neither teaches a continuous metal composition. Ohno teaches a continuous metal casting process. Ohno, col. 2 lines 10-13, teaches continuous casting, in an upward or horizontal direction of an alloy having a cross sectional shape in the form of a plate, bar or tube. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the Ohno casting method to form the Parikh alloy because Parikh, col. 1 lines 59-62, teaches the continuous casting of a metal ingot results in a smooth and beautiful surface with a high degree of stability. It would have been obvious to one of ordinary skill in the art at the time of the invention that the alloy would be stretched as it is pull in the upward or horizontal direction. Oishi, paragraph 10 of the PGPUB, further teaches the alloy is suitable for use in city water faucets, water/supply/drainage metal fittings and hot water supply pipe fittings.

Claim 109 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 15 and further in view of Ohno (4515204). Although Parikh and Oisha teach a copper alloy composition, neither teaches a continuous metal composition. Ohno teaches a continuous metal casting process. Ohno, col. 2 lines 10-13, teaches continuous casting, in an upward or horizontal direction of an alloy having a cross sectional shape in the form of a plate, bar or tube. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the Ohno casting method to form the Parikh alloy because Parikh, col. 1 lines 59-62, teaches the continuous casting of a metal ingot results in a smooth and beautiful surface with a high degree of stability. It would have been obvious to one of ordinary skill in the art at the time of the invention that the alloy would be stretched as it is pull in the upward or horizontal direction. Oishi, paragraph 11 of the PGPUB, further teaches the copper alloy is suitable for hydraulic parts, bearings and gears.

Claims 134 and 135 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 3 and further in view McDevitt (5288458). Although Parikh and Oisha teach a copper alloy composition, both do not teach the form zirconium is added to the alloy. McDevitt, col. 6 lines 45-55, teaches adding zirconium telluride to a copper alloy. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate zirconium in the form of zirconium telluride as taught by Mc Devitt into the Parikh

modified by Oisha copper alloy because McDevitt teaches zirconium telluride improves the machinalbilty of the alloy.

Regarding 135, Parikh teaches a copper alloy comprising copper, zinc and zirconium and further comprising phosphorus.

Claims 136 and 137 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 5 and further in view McDevitt (5288458). Although Parikh and Oisha teach a copper alloy composition, both do not teach the form zirconium is added to the alloy. McDevitt, col. 6 lines 45-55, teaches adding zirconium telluride to a copper alloy. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate zirconium in the form of zirconium telluride as taught by Mc Devitt into the Parikh modified by Oisha copper alloy because McDevitt teaches zirconium telluride improves the machinalbilty of the alloy.

Regarding 137, Parikh teaches a copper alloy comprising copper, zinc and zirconium and further comprising phosphorus.

Claims 138 and 139 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh et al (4110132) in view of Oisha (20020159912) as discussed in claim 7 and

further in view McDevitt (5288458). Although Parikh and Oisha teach a copper alloy composition, both do not teach the form zirconium is added to the alloy. McDevitt, col. 6 lines 45-55, teaches adding zirconium telluride to a copper alloy. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate zirconium in the form of zirconium telluride as taught by Mc Devitt into the Parikh modified by Oisha copper alloy because McDevitt teaches zirconium telluride improves the machinalbilty of the alloy.

Regarding 139, Parikh teaches a copper alloy comprising copper, zinc and zirconium and further comprising phosphorus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEFANIE COHEN whose telephone number is (571)270-5836. The examiner can normally be reached on Monday through Thursday 8:00am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jenny McNeil can be reached on 5712721540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Stefanie Cohen 9/12/2008

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